Panacea’s Glass: Intelligent Dashboard for Augmented Reality based Co-ordination for Mass Casualty Disaster Triage

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Problem Overview
When working with critical-care patients, doctors and nurses face many co-ordination challenges
- Augmented reality based technologies can help to stay updated on the status of patients and care levels

Needs is even more critical in a natural disaster scenarios
- Large volume of patients with varying states of injuries
- Effective co-ordination of limited medical staff and supplies

Delayed/ missed triage may cause loss of lives!

Panacea’s Glass: Intelligent Dashboard Solution
- Provides an effective way for incident commanders to communicate with first responders in an incident or natural disaster
  - Works without dependence of any scene infrastructure
- Easy-to-use interactive interface
  - Incident management
  - Patients status tracking
  - Supplies replenishment
  - Responder co-ordination
- Incident Commander can quickly access any part of the Dashboard and give aid to staff on the scene
- Incident Command System (ICS) applications with integration of Internet of Things (IoT)

Panacea’s Glass: Intelligent Dashboard

Integrated IoT Applications
- Audio/Video Communication: Heads Up Displays (HUD) utilized to provide the Incident Commander with a live feed of the incident
- Virtual Beacons/QR Codes: By accessing the QR code scanner on the glass, staff can quickly change the status of a patient in the database and enable other micro-location based services

Experimental Evaluation
Panacea’s Glass Platform Evaluation:
Heat Study:
- Measured temperatures on Google Glass and Recon Jet during video and audio stream processing
- Concluded that Recon Jet had a lower temperature and would be more advantageous to use

Connection Study:
- Tested length of stream connection with Google Glass and Recon Jet in static and dynamic environments
- Recon Jet did not disconnect for both static and dynamic situations, but Google Glass disconnected

Usability Evaluation of Intelligent Dashboard:
Simulation Study:
- Incident Scenario: Conducted a two-incident simulation (car crash and building fire) to test co-ordination effectiveness for commander response

Expert Opinion:
- Discussed improvements with actual ICS user to provide better communication and co-ordination
- Test subject concluded that Panacea’s Glass Intelligent Dashboard was ‘Very Effective’ for the claimed purpose!

Our results illustrate Incident Commander can efficiently deploy staff and resources to ultimately reduce triage time and potentially save many lives during disasters!

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